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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,300	09/08/2003	Eric Stephen Mattis	030296	2134

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QUALCOMM INCORPORATED
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EXAMINER	
PRESTON, ERIK D	
ART UNIT	PAPER NUMBER
2834	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/24/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/658,300	MATTIS ET AL.	
	Examiner	Art Unit	
	Erik D. Preston	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rainwater (US 4345256, previously cited) in view of Belyanskii et al. (RU 2165582 C2, previously cited) further in view of Torrey (US 2659818).

With respect to claim 1, Rainwater teaches an apparatus for providing electrical coupling, comprising: A motive device (Fig. 2, #40) being capable of rotation (Col. 2, Lines 66 & 67), said motive device being further capable of allowing electrical signals to pass there through and an antenna horn (Fig. 2, #16) rotatable about said motive device, said motive device being disposed coaxially with said antenna horn on an axis of said antenna horn which extends through a plane in which said antenna horn is rotatable, but it does not explicitly teach that (1) said motive device is a motor having a hollow shaft extending there through, or that (2) the antenna horn is directly connected to said conductor.

However, Belyanskii teaches a motor (Fig. 2, #25 & 26) used for actuating an antenna having a hollow shaft (Fig. 2, #31) extending there through, and Torrey teaches that flexible conductors (Fig. 1, #24) can be directly connected to movable antenna horns (Fig. 1, #22).

It would have been obvious to one of ordinary skill in the art at the time of the invention to: (1) modify the motive device of Rainwater in view of the motor and hollow

shaft as taught by Belyanskii because it provides an equivalent and equally well-known antenna actuation means (Belyanskii, Abstract); and (2) modify the separate conductor and coupling means of Rainwater in view of the directly connected flexible conductor as taught by Torrey because it provides an equivalent and equally well known means for communicating signals from a movable antenna to a radar system (Torrey, Col. 2, Lines 21-35).

With respect to claim 2, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 1, wherein the shaft comprises a conductor (Rainwater, Fig. 2, #70; Belyanskii, Abstract & Torrey, Fig. 1, #24) for conducting electrical signals through said motor.

With respect to claim 3, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 1, further comprising an electrical conductor (Rainwater, Fig. 2, #70 & Belyanskii, Fig. 2, #22) located within said shaft for providing electrical signals through said motor.

With respect to claim 4, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 3, and Rainwater teaches that the electrical conductor comprises a coaxial cable (Col. 3, Lines 32-44, the terms "cable" and "feed line" are considered by the examiner to be equivalents).

With respect to claim 5, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 3, and Belyanskii teaches that the conductor comprises a rotational coupler (Abstract, as seen in Fig. 2).

With respect to claim 6, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 3, and Rainwater teaches that the electrical conductor comprises a wire (Col. 3, Lines 32-44, the terms "wire" and "feed line" are considered by the examiner to be equivalents).

With respect to claim 7, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 1, and Rainwater teaches that the shaft comprises a waveguide (Belyanskii, Fig. 2, #22 & Torrey, Fig. 1, #22).

With respect to claim 8, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 7, and Belyanskii teaches that the shaft additionally comprises a waveguide coupler (Abstract, as seen in Fig. 2).

With respect to claim 9, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 3, and Belyanskii teaches a rotational coupler (as seen in Fig. 2) for coupling said electrical signals between a second conductor (the waveguide positioned at the bottom of Fig. 2) and the conductor (Fig. 2, #22).

With respect to claim 10, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 3, and Belyanskii teaches a platform (Fig. 2, #24) connected to the shaft wherein the conductor is fixed with respect to the shaft.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rainwater (US 4345256, previously cited) in view of Belyanskii et al. (RU 2165582 C2, previously cited) in view of Torrey (US 2659818) further in view of Studer et al. (US 4321572, previously cited).

With respect to claims 11 & 12, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 3, Belyanskii teaches a platform connected to the shaft, and Rainwater teaches that the electrical conductor comprises an outer conductor (Fig. 2, #76), a dielectric (which inherently exists in a coaxial feed line), and a center conductor (Fig. 2, #78), wherein the dielectric and the center conductor are fixed, but it does not explicitly teach that the outer conductor is fixed to the shaft. However, Studer teaches a shaft (Fig. 6, #110) that functions as a second conductor. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coaxial conductors of Rainwater in view of the coaxial conductors as taught by Studer as merely a substitution of equally well known and equivalent means for transmitting signals through a rotor shaft. It also would have been obvious to one of ordinary skill in the art at the time of the invention to fix the outer conductor to the shaft since it has been held that "the use of a one piece construction...would be merely a matter of obvious engineering choice." (In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

With respect to claim 13, Rainwater in view of Belyanskii in view of Torrey teaches the apparatus of claim 1, and Rainwater teaches that the shaft comprises a dielectric material within the center shaft, and a center conductor within the shaft, but it does not teach that the dielectric material is affixed to the shaft. However, Studer teaches a shaft (Fig. 6, #110) with a dielectric material (Fig. 6, #106) affixed thereto. It also would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coaxial conductors of Rainwater in view of the coaxial

conductors as taught by Studer as merely a substitution of equally well known and equivalent means for transmitting signals through a rotor shaft. It would have been obvious to one of ordinary skill in the art at the time of the invention to fix the outer conductor to the shaft since it has been held that "the use of a one piece construction...would be merely a matter of obvious engineering choice." (In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

Response to Arguments

Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5021798

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

04/05/2007

BURTON S. MULLINS
PRIMARY EXAMINER